ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Revision of the Commission's	)	CC Docket No. 94-102
Rules To Ensure Compatibility	)	
With Enhanced 911 Emergency	)	
Calling Systems	)	

COMMENTS OF MOTOROLA, INC.

Motorola respectfully submits its comments on the Commission's Public Notice regarding an *ex parte* presentation entitled, "Public Safety-Wireless Industry Consensus: Wireless Compatibility Issues, CC Docket 94-102."[1] Motorola supports many of the concepts set forth in the *Agreement*. However, because a 12 to 18 month implementation schedule for wireless automatic number identification ("ANI") is almost certainly unachievable, Motorola respectfully urges the Commission to reconsider this timetable.

I. INTRODUCTION

The *Agreement* represents a consensus between the Cellular Telephone Industry Association ("CTIA") and three public safety associations[2] on how wireless access to enhanced 911 (E911) services should be implemented. In particular, the *Agreement*

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[1] DA 96-108 (released Feb. 16, 1996) ("*Agreement*").

[2] The National Emergency Number Association ("NENA"), the Association of Public Safety Communications Officials ("APCO"), and the National Association of State Nine One One Administration ("NASNA").

contemplated the following two-phased implementation scheme. First, within 12 to 18 months, the wireless industry will provide "cell site information using a 7 or 10-digit pseudo-ANI *and* a 7 or 10 digit caller ANI (*i.e.* calling party number), depending on the local landline network's signaling capability."[3] Second, within five years, the wireless industry will achieve "the ability to locate, in latitude and longitude, a wireless caller within 125 meters Root Mean Square."[4]

Since the inception of this docket, Motorola has consistently supported wireless access to enhanced 911 (E911) services for both ethical and economic reasons. As a responsible member of the communications industry, Motorola wants to see the most advanced life saving communications equipment deployed whenever technologically and economically feasible. In addition, Motorola is well aware that many individuals purchase CMRS equipment in order to better ensure their personal safety. As one of the largest manufacturers of wireless telecommunications equipment, Motorola realizes that it is in its economic interest to provide products -- such as E911 capable wireless handsets and network equipment -- that meet this demand.

In this proceeding, Motorola feels that it can best serve the Commission by offering the knowledge and perspective of a manufacturer of wireless handsets, base stations, and switching equipment. Such input is important, given that the *Agreement* itself represents the knowledge and experience of only the public safety community and

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[3] *Agreement* at 1.

[4] *Id.* at 2.

a trade association for a single wireless technology. Because any blueprint for wireless access to E911 must be implemented by wireless carriers, local exchange carriers, equipment manufacturers, public safety agencies, and federal, state, and local governments, the Commission should study the comments of all of these entities prior to promulgating final rules.[5]

Against this background, Motorola generally supports the *Agreement*'s proposals to ensure that public safety answering points ("PSAPs") are provided with both automatic number identification and automatic location identification ("ALI") when a wireless caller places a 911 call. However, because the 12 to 18 month implementation timetable for ANI proposed by the *Agreement* is likely not achievable, Motorola urges that it be modified by the Commission. Regarding the *Agreement*'s Phase II ALI proposal, Motorola endorses the suggestions that the deployment schedule be reduced from three to two phases, and that the precision of the requirement be slightly diminished. Finally, although future technological developments are difficult to predict, Motorola is cautiously optimistic that the proposed five year Phase II implementation schedule can be met.

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[5] For the reasons stated in Motorola's Comments in this proceeding, Motorola strongly urges the Commission to adopt proposals to exclude non-geostationary mobile satellite services (one-way paging and private mobile systems) from the compatibility requirements for E911 features.

II. THE PROPOSED IMPLEMENTATION SCHEDULE FOR ANI IS INCONSISTENT WITH THE CURRENT STATE OF NETWORK TECHNOLOGY

From a technical point of view, the desired endpoint of the *Agreement*'s ANI proposal is for a wireless carrier to pass both pseudo-ANI and true ANI to the PSAP. Once received by the PSAP, the pseudo-ANI can be used to locate the cell site that received the wireless call (thereby assisting in locating the caller), and the true ANI can be used to call back the mobile caller. Thus, these two numbers must be passed from the wireless handset to the wireless carrier's network to the local exchange carrier's network to the PSAP.

Even assuming the best case scenario -- that both the wireless and wireline networks deploy SS7 signaling[6] -- passing both true ANI and pseudo-ANI to the PSAP is a non-trivial development. While SS7 has the data capacity to carry both ANI and pseudo-ANI, SS7 currently accepts only one form of ANI. Therefore, a new SS7 application protocol must be defined by standards bodies, implemented, tested, and deployed in both wireless and wireline networks before both ANI and pseudo-ANI can be transmitted.

Second, the selective routers in the 911 tandem currently route 911 calls to PSAPs based on 7 digit ANI. Because the installed base of selective routers currently consists of CAMA systems that only have the capacity to process a single 7 digit ANI,

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[6] Most, but not all local exchange carriers have SS7 networks. Some cellular carriers have SS7 networks, while most utilize IS-41 signaling. Finally, most PCS networks are expected to deploy SS7.

they cannot pass both the required 10 digit ANI and pseudo-ANI to PSAPs. In order to give PSAPs access to both pieces of information, either SS7 capable selective routers must be installed in LEC networks or an interim alternative arrangement must be defined. Finally, even with the current availability of SS7 capable selective routers, a new application protocol must be developed, implemented, and deployed.

In pointing out these obstacles to the implementation of wireless E911, Motorola is not claiming that such a capability is technically infeasible. To the contrary, the basic technological building blocks (*i.e.*, the switching and signaling capabilities) required to implement wireless E911 are currently available -- they simply have not been standardized, developed, and deployed nationwide. Thus, the initial challenge is one of developing data and signaling protocols that allow ANI and location information to be passed from a wireless caller to a PSAP. Motorola believes that in order to implement wireless E911 economically, a non-network specific standard is essential.

Motorola's own manufacturing experience is that it takes 18 to 24 months *after standards are promulgated* to ship the first test versions of a product to a limited number of markets. After months of further testing, production versions are then shipped to all markets. Thus, even if the applicable standards were promulgated today, Motorola would not be able to supply its customers with sufficient quantities of equipment to meet the *Agreement*'s 12 to 18 month deadline.

Finally, Motorola endorses the *Agreement*'s proposal to eliminate the "automatic re-ring" requirement.[7] To facilitate re-ring, the connection to a wireless subscriber unit cannot be "held up" when a caller hangs up, as it can be in a wireline setting. Therefore, "re-ring" is no more reliable in a wireless setting than "call back," which is facilitated by the Phase I requirement to deliver ANI to the PSAP. For this reason, the elimination of the "automatic re-ring" requirement is a rational and cost-effective decision.

III. MOTOROLA GENERALLY ENDORSES THE ALI PROPOSALS

Motorola endorses the *Agreement*'s proposals to reduce the ALI implementation plan from a three-phased plan to a two-phased plan,[8] and to reduce somewhat the rigor of the ALI requirement.[9] The Notice of Proposed Rulemaking[10] suggested a "Phase 2" that would have required carriers to provide PSAPs with a caller's approximate distance from the receiving cell site. Many parties, including Motorola,[11] commented that such a requirement would lead to the development of dead-end technology, be inordinately costly, and would not provide PSAPs with useful information. Because

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[7] *Agreement* at 4-5.

[8] *Id.* at 2.

[9] *Id.*

[10] FCC 94-237 (released October 19, 1994), ¶ 50 ("*Notice*").

[11] Motorola Comments at 14. *See also* Ericsson Comments at 7-8; GTE Comments at 18-20; Southwestern Bell Comments at 16-17; PCIA Comments at 14-15.

Motorola continues to believe that this analysis is correct, it endorses the proposal to eliminate the old Phase 2 from the ALI implementation schedule.

Motorola further agrees with the *Agreement*'s proposal that wireless carriers no longer be required to produce caller location information that is 100 percent accurate to a 125 meter sphere.[12] As stated in the *Agreement* "no terrestrial ALI technique now envisioned will be able to perform the 125 meter tolerance 100% of the time."[13] Moreover, elimination of the altitude parameter should remove significant technical complexity to a workable ALI technology. Motorola therefore commends the parties to the agreement for proposing a new accuracy requirement that comports with the expected capabilities of reasonably priced wireless ALI technologies.

Regarding the proposed implementation schedule for ALI technology, Motorola believes that five years is a facially reasonable timeframe. As stated above, because it is in Motorola's economic interest to develop a cost-effective wireless ALI system, it will continue to make every effort to do so. However, given the unpredictability of technological developments, Motorola cannot in good faith assure the Commission that it can meet this schedule.

Finally, Motorola urges the Commission to ensure that when and if it adopts standards for wireless location technologies, that these standards be compatible with all radio frequency technologies. In this vein, Motorola questions whether the specific

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[12] *See Notice*, ¶ 51.

[13] *Agreement* at 2.

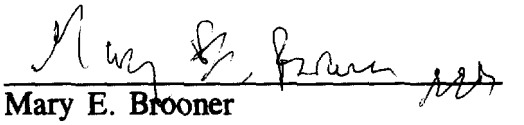
location technology described in the *Agreement* can be used with digital air interfaces. From the *Agreement* and its attached Exhibits, it is unclear whether the field testing was done using an analog AMPS air interface. If so, then digital TDMA air interfaces might be compatible with this equipment. However, digital CDMA air interfaces are likely to require a substantially different technology to determine location. Such a technology has yet to be developed or afforded similar field test experience.

IV. CONCLUSION

Motorola recognizes much of the *Agreement* as an important step in providing wireless callers with access to E911 services. However, because the proposed deadline for the implementation of wireless ANI does not comport with the current state of deployable network technology, and because further field testing of the location technology with digital air interfaces needs to be undertaken, Motorola respectfully suggests that this deadline be extended.

Respectfully submitted,

MOTOROLA, INC.

By: 

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Dated: March 4, 1996

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing "Comments Of Motorola, Inc." were served this 4 day of March, 1996 by first class mail, postage prepaid, on the parties on the attached list.

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